

I/W Well Completion Program

April 4, 2014

IRANI ENGINEERING
PETROLEUM ENGINEER
2625 FAIR OAKS BLVD., SUITE 10
SACRAMENTO, CALIFORNIA 95864
916-482-2877
FAX 916-482-7514

PG&E

King Island Injection/Withdrawal Test Well No. 1

Location: X=1734880.641 Y= 577346.753 (NAD 27, Zone III)
Section 27, T 3N, R 5E, San Joaquin County, California.
Elevation: -3.75' ground. +8.25' KB (NGVD 29)

Take all measurements from KB which is 12' above ground.

Present Condition

TD:~4772' MD PD: ~4767' MD

Casing: 13-3/8", 54.5#, J-55 surface casing cemented at 600

9-5/8", 40#, J-55 & N-80 intermediate casing cemented at 4730'.

5-1/2" premium wire wrap liner gravel packed from 4710' to 4772'.

Tubing: 5-1/2", 15.5#, J-55, LT&C, thread with seal assembly stabbed into
SC packer at ~4637'.

Note: A downhole permanent pressure gauge is above the seal assembly. There is
1/4" cable that runs outside of tubing and it is affixed to the tubing with
5-1/2" Cross Coupling Cable Protectors at every connection. The cable goes
through the outlets in the tubing hanger and tubing head top flange and is
connected to an instrument junction box at surface.

Note: There is 4% KCL water in tubing. This well is directional with maximum
angle of 20 degrees.

Completion Program

1. Install two Baker Tanks (500 bbls each) on location. Install and stake a 3" steel line from the wing valve to a tank.
2. Move in 2-1/2" coil tubing truck on location. Run coil tubing to bottom of hole at around 4767'MD. Using Nitrogen unload completion fluid. Using Nitrogen induce formation water flow. Flow more than 300 Bbl of formation water. Perform field measurements for PH, conductivity, temperature, and TDS. Take 3 formation water samples and send to an EPA approved laboratory and analyze for Trace Metals, Major Anions and Cations, Alkalinity, Conductivity, Hardness, PH, and TDS, Specific Gravity (see II.E.1(a)), and Oil & Grease (per 40 CFR&136.3). The analysis should indicate the recovery of Mokelumne formation water.
3. During the injection/Withdrawal and shut in operations maintain 100 psig pressure (use Nitrogen) on the 9-5/8" X 5-1/2" annulus. Install electronic pressure gauges on both tubing and annulus (5-1/2" X 9-5/8") outlets. Monitor tubing pressure and annulus pressure continuously.

April 4, 2014